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ABSTRACT

This report, fifth in the series, is an evaluation study of the Ukrainian-English Bilingual Program in the Edmonton Catholic School System. It examines three areas: (1) pupil academic achievement, (2) pupil cultural appreciation, and (3) perceptions of relevant groups toward the program. Pupils enrolled in the program in Grades 1 through 5 during the 1978-1979 school year participated in the study. These students were matched with control groups, and both groups were given achievement tests to evaluate academic progress. Questionnaires were used to determine the perceptions of parents, teachers, and principals. The major findings indicated that: (1) students in the bilingual program achieved as well in English language arts and mathematics as students in the regular program; (2) students had made very significant progress in learning Ukrainian: (3) parents and teachers indicated that students had acquired an appreciation of Ukrainian culture and an understanding of the Ukrainian Catholic Rite: (4) the religious component of the program, including instruction in the Ukrainian Catholic Rite, was rated very highly by the parents: (5) program objectives were perceived to be appropriate and were being achieved, to a large extent; and (6) teachers expressed a need for further inservice training and identified a need for curricular and instructional materials. (Author/AMH)

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EVALUATION
OF A
UKRAINIAN-ENGLISH BILINGUAL PROGRAM
1978—1979

Edmonton Catholic School System

prepared by

E. Ewanyshyn, Supervisor of Ukrainian

March 1980

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ABSTRACT

The Ukrainian-English Bilingual Program, coordinated by Alberta Education, was implemented by the Edmonton Catholic School System in the fall of 1974. This report, fifth in the series, is an evaluation study of the Ukrainian-English Bilingual Program that examines three areas: pupil academic achievement, pupil cultural appreciation and the perceptions of relevant groups toward the bilingual program. Pupils enrolled in the Ukrainian-English Bilingual Program in the Edmonton Catholic School System during the 1978-1979 school term, Grades One through Five, participated in the study.

The main purpose of this study was to determine the consequences of the implementation and operation of the bilingual program.

Students in the bilingual program at the Grades Two, Three, Four and Five levels were matched with control groups on the following variables: Grade, sex, age, Primary Mental Ability (PMA) score and socio-economic status (SES). To evaluate academic progress, achievement instruments (individually administered and group tests) were administered to the experimental and control students. To compare the achievement test score results of the experimental and control groups, *t* tests for dependent samples were carried out. Questionnaires were used to determine the perceptions of parents, teachers, principals and pupils toward the bilingual program.

The major findings indicated that students in the Ukrainian-English Bilingual Program, according to test score results, achieved as well in English language arts and mathematics as students

in the regular program at the Grades Two, Three, Four and Five levels. Ukrainian Language Skills test results showed that students made very significant progress in learning Ukrainian. According to the perceptions of parents and teachers, students acquired an appreciation of Ukrainian culture and an understanding of the Ukrainian Catholic Rite. Moreover, the attitudes of parents, students, teachers and principals were very positive toward the program.

Of importance, the religious component of the program, including instruction in the Ukrainian Catholic Rite, was rated very highly by the parents. Program objectives were perceived to be appropriate and were being achieved, to a large extent, according to the perceptions of parents, teachers and principals. Furthermore, parents, teachers and principals generally considered the program operation to be very effective. Teachers, however, expressed a need for further inservice training and identified a need for curricular and instructional materials.

A majority of parents indicated that the following subject areas would be most appropriate for instruction in Ukrainian at the Junior High level: religion, arts and crafts, music, language arts, home economics and drama.

The study is concluded with a discussion of the implications.

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I. INTRODUCTION

The Ukrainian-English Bilingual Program was implemented by the Edmonton Catholic School System in the fall of 1974. Each year since that time, a comprehensive evaluation of the bilingual program was carried out. Evaluation reports were completed for the 1974-75, 1975-76, 1976-77, and 1977-78 school years.

This study, fifth in the series, is an evaluation of the Ukrainian-English Bilingual Program in the Edmonton Catholic School System, carried out during the 1978-1979 school term.

Statement of the Major Problem

The study examines the development and operation of the Ukrainian-English Bilingual Program during the 1978-1979 school term and is based largely on the evaluation model developed over the preceding four-year period. More specifically, the main problem may be stated as follows: What are the consequences associated with the implementation and operation of a bilingual program?

As presented in the 1976-1977 evaluation report, the study was designed to examine three areas: (1) pupil academic achievement, (2) pupil cultural appreciation, and (3) perceptions of relevant groups toward the bilingual program.

Sub-Problems

The study was designed to provide specific information about the implementation and operation of the Ukrainian-English Bilingual Program. In order to establish an adequate data base,

an attempt was made to determine the consequences of the bilingual program by addressing the following sub-problems:

1. Pupil Academic Achievement:
   (a) How does the performance of the Ukrainian Bilingual Program students in the English language arts and in mathematics compare with other students in the Edmonton Catholic Schools?
   (b) What progress have students made in learning Ukrainian language skills over the course of one school year?
2. Cultural Appreciation:
   (a) What is the effect of the program on students' appreciation of the Ukrainian culture, including their understanding of the Ukrainian Catholic Rite?
3. Attitudes of Relevant Groups:
   (a) To what extent are program objectives perceived to be appropriate by parents, teachers and principals?
   (b) To what extent are program objectives being achieved, according to the perceptions of parents, teachers and principals?
   (c) To what extent is the program operation effective, according to the perceptions of parents, teachers and principals?
   (d) To what extent are curricular and instructional materials considered to be adequate for the program, according to the perceptions of teachers?

(e) What kind of inservice training is required, according to the perceptions of teachers?

(f) What are the special administrative arrangements required at the school level for the effective operation of the bilingual program?

OUTLINE OF REPORT

Chapter I introduced the study and dealt with the main problem and a statement of the sub-problems. A brief outline of the program, a description of the subjects, methodology, instrumentation, data gathering and statistical procedures are found in Chapter II. The analysis of the data, findings and discussions are included in Chapter III. The last chapter, Chapter IV, contains the summary and conclusions of the study.

II. EVALUATION PROCEDURES

This chapter contains a brief outline of the Ukrainian-English Bilingual Program in the Edmonton Catholic School System, a description of the subjects, methodology, instrumentation, data gathering procedures and a discussion of the statistical analyses used in the study.

PROGRAM DESCRIPTION

The Ukrainian-English Bilingual Program, implemented in the fall of 1974, was designed to provide students with the opportunity to learn the Ukrainian language as a "language of instruction", along with acquiring English language communication skills. During the 1978-1979 school term, the program was offered at Early Childhood (Kindergarten), and Grades One through Five.

Long Range Objectives

In addition to the objectives expected of students in all Alberta Schools, the objectives of the Ukrainian-English Bilingual Program are to help students acquire proficiency in the Ukrainian language and develop an appreciation of the Ukrainian culture. More specifically, they include:

1. To develop a functional use of the Ukrainian language. Students should be able to understand Ukrainian when it is spoken, participate easily in conversation as well as read and write in Ukrainian, within the limits of their experience in the Ukrainian language.

2. To develop an understanding and appreciation of the attitudes, cultural values, customs and traditions of the people of Ukrainian origin and foster a security in one's identity.

3. To facilitate the development of positive attitudes towards the learning of other languages and understanding of other cultures.

For the child of Ukrainian origin, the bilingual Ukrainian-English experience will provide opportunity for personal identification with the Ukrainian language and culture in the Canadian and International context (Alberta Education, 1976).

Early Childhood Education (Kindergarten). In Early Childhood emphasis is given to the development of oral skills in both English and Ukrainian. Children learn to understand spoken Ukrainian and are encouraged to participate in conversation by taking part in a variety of classroom activities, including storytelling, games, action songs, show and tell, picture stories, choral work, drama and puppetry.

The elementary program. In Grades One through Five, children take regular instruction in English in the academic subject areas for approximately fifty percent of the school day, and instruction in Ukrainian in the cultural subject areas for the balance of the day. At the Grade One level, English is used as the

language of instruction in reading, language arts, arithmetic and science. Oral Ukrainian is used in social studies, language arts, physical education, art, music, health and religion. At the Grade Two, Three, Four and Five levels, in addition to the use of English and Ukrainian in the subject areas outlined for Grade One, a developmental reading program is introduced in the Ukrainian language, along with instruction in the writing skills, including practical and creative writing. In the religion program, students are provided instruction in the Ukrainian Catholic Rite.

The emphasis, thus, in the Ukrainian-English Bilingual Program at the Grade One level is on the development of listening and speaking skills in Ukrainian in the cultural subject areas, and the development of English language skills in the academic subject areas. Moreover, instruction in religion, in the Ukrainian Catholic Rite, is an integral part of the bilingual program.

DESCRIPTION OF SUBJECTS

All students in the Ukrainian-English Bilingual Program at the Grades One, Two, Three, Four and Five levels, the experimental groups, participated in the study. Information about the family backgrounds of the 269 students involved in the study, was obtained from questionnaires completed by parents. Tables 1 and 2 indicate the distribution of parents of bilingual program students, according to ethnic origin. The tables show that the majority of parents, father and mothers, were of Ukrainian origin. Tables 3 and 4

indicate the distribution of parents of bilingual program students, according to educational background.

Table 5 shows the distribution of parents of bilingual program students, according to religious affiliation. As shown in Table 5, a large percentage of parents were of Ukrainian Catholic background.

Table 1

Percentage Distribution of Fathers of Program Subjects According to Ethnic Origin (Experimental Group)

	*G1 Fathers N=54	G2 Fathers N=44	G3 Fathers N=35	G4 Fathers N=22	G5 Fathers N=29
English	-	-	2.9	-	-
French	3.7	2.3	-	-	-
German	3.7	4.5	2.9	-	-
Irish	-	2.3	-	-	-
Polish	-	2.3	-	-	-
Russian	-	-	-	-	-
Scottish	-	4.5	2.9	9.1	-
Ukrainian	66.7	72.7	85.7	77.3	93.1
Other	25.9	11.4	5.7	13.6	6.9

*G1, G2, G3, G4 and G5 refer to Grade level.

Table 2

Percentage Distribution of Mothers of Program Subjects
According to Ethnic Origin
(Experimental Group)

	*G1 Mothers N=54	G2 Mothers N=45	G3 Mothers N=35	G4 Mothers N=22	G5 Mothers N=28
English	3.7	4.4	2.9	-	-
French	-	2.2	2.9	-	-
German	-	4.4	5.7	13.6	3.6
Irish	1.9	-	-	-	-
Polish	7.4	2.2	2.9	4.5	7.1
Russian	-	2.2	-	-	-
Scottish	-	-	-	-	-
Ukrainian	66.7	77.8	65.7	63.6	78.6
Other	20.4	6.7	20.0	18.2	10.7

*G1, G2, G3, G4 and G5 refer to Grade level.

Table 3

Percentage Distribution of Fathers of Program Subjects
According to Educational Background
(Experimental Group)

	*G1 Fathers N=51	G2 Fathers N=42	G3 Fathers N=32	G4 Fatherss N=18	G5 Fathers N=29
Schooling up to Grade 9	11.8	11.9	6.3	5.6	13.8
Schooling between Grades 10-12	37.3	26.2	18.8	38.9	34.5
Institute of Technology or Business Program	21.6	21.4	21.9	22.2	20.7
Some University Courses	-	7.1	6.3	-	3.4
University Degree Completed	29.4	33.3	46.9	33.3	27.6

*G1, G2, G3, G4 and G5 refer to Grade level.

Table 4

Percentage Distribution of Mothers of Program Subjects According to Educational Background (Experimental Group)

	*G1 Mothers N=53	G2 Mothers N=43	G3 Mothers N=32	G4 Mothers N=19	G5 Mothers N=28
Schooling up to Grade 9	11.3	4.7	3.1	5.3	17.9
Schooling between Grades 10-12	34.0	39.5	34.4	36.8	28.6
Institute of Technology or Business Program	26.4	20.9	25.0	10.5	39.3
Some University Courses	3.8	9.3	12.5	21.1	3.6
University Degree Completed	24.5	25.6	25.0	26.3	10.7

*G1, G2, G3, G4 and G5 refer to Grade level.

Table 5

Percentage Distribution of Religious Affiliation of Parents of Program Subjects by Stream in Experimental Groups

	Protestant	Roman Catholic	Ukrainian Catholic	Ukrainian Orthodox	Other
Stream 1, Grade 5 (N=30)					
Father	-	6.7	86.7	6.7	-
Mother	-	13.3	83.3	3.3	-
Stream 2, Grade 4 (N=22)					
Father	9.1	13.6	68.2	9.1	-
Mother	4.5	36.4	59.1	-	-
Stream 3, Grade 3 (N=35)					
Father	5.7	2.9	80.0	8.6	2.9
Mother	5.7	8.6	71.4	14.3	-
Stream 4, Grade 2 (N=43)					
Father	7.0	11.6	65.1	14.0	2.3
Mother	6.7	24.4	66.7	2.2	-
Stream 5, Grade 1 (N=53)					
Father	1.9	22.6	62.3	7.5	5.7
Mother	3.7	20.4	66.7	5.6	3.7

METHODOLOGY

The research study was designed so that bilingual program students could be matched with a control group of students in the regular school program. For the purpose of comparing achievement test score results at the Grades Two, Three, Four and Five levels, students were paired to form matched samples.

Matching Procedures

The experimental groups of students (T_2, T_3, T_4, T_5), enrolled in the Ukrainian-English Bilingual Program in three of the Edmonton Catholic schools, came from various parts of the city.

The control groups of students (C_2, C_3, C_4, C_5), however, were selected from the population of students in the regular Grades Two, Three, Four and Five classes at the three schools in which the Ukrainian-English Bilingual Program was offered or from neighboring schools of relatively similar socio-economic status. The matched samples are indicated in Table 6.

In matching the experimental groups of students with the control students, five variables were considered: Grade, sex, age, Primary Mental Ability score (PMA), and socio-economic status (SES). The five variables were used in matching the experimental and control group students in order to increase the internal validity of the project design (Campbell and Stanley, 1972). Each variable was deemed to be important in determining to some extent the students' relative success or failure in achieving the objectives of the school program. Table 7 shows the PMA, LT (Lorge-Thorndike) and SES scores.

As shown in Table 7, some PMA and SES scores were unavailable. A small number of stream 1 students missed taking the PMA test, as they entered the program in the second year by transferring from another school. To determine SES scores, information on the occupational background of the major wage earner in the family was obtained from student registration forms and parent questionnaires. Some of the registration forms, however, were incomplete or unavailable; hence, discrepancies are evident between the N in the experimental and control groups on SES scores in Table 7. As indicated, the Lorge-Thorndike (LT) test scores were obtained from tests administered to the Grade Four and Five students.

Table 6

Distribution of Experimental (T) and Control Group (C) Matched Samples

Matched Samples by Grade	Number of Subjects	
	Experimental	Control
Grade Two students	63	63
Grade Three students	53	53
Grade Four students	34	34
Grade Five students	43	43
Total	193	193

Table 7

Distribution of Mean PMA, LT and SES Scores by Stream

	Experimental		Control	
PMA Scores	N	PMA	N	PMA
Stream 1, Grade 5	38	116.7	26	114.6
Stream 2, Grade 4	31	114.1	27	112.1
Stream 3, Grade 3	44	113.8	46	111.7
Stream 4, Grade 2	58	112.7	59	114.7
LT Scores	N	LT	N	LT
Stream 1, Grade 5	43	110.7	43	110.8
Stream 2, Grade 4	33	105.9	34	108.5
SES Scores	N	SES	N	SES
Stream 1, Grade 5	42	48.1	-	-
Stream 2, Grade 4	32	52.7	13	48.2
Stream 3, Grade 3	47	54.4	23	48.2
Stream 4, Grade 2	58	49.6	10	42.1

INSTRUMENTATION

Instruments were selected or designed to measure student achievement and the perceptions of relevant groups toward the bilingual program. To measure student achievement, the following test instruments were used: Canadian Test of Basic Skills (CTBS), Gates-MacGinitie Reading (Vocabulary and Comprehension), Science Research Associates (SRA) Arithmetic Test, School System Spelling and Ukrainian Language Skills tests.

In order to obtain information about the perceptions of relevant groups toward the bilingual program, questionnaires were developed separately for parents, teachers, and principals. The parent questionnaires were completed by the parents of children in the Ukrainian-English Bilingual Program at the Grades One, Two Three, Four and Five levels. Teachers offering instruction in the bilingual program completed the teacher questionnaire, while the principals and assistant principals of the schools offering the bilingual program completed the principal questionnaire.

Achievement Tests

Table 8 shows the distribution of achievement tests used in the study, according to group and Grade level.

Table 8

Distribution of Achievement Tests, According to Group and Grade Level

Name of Test	Group	Grade Level
Canadian Test of Basic Skills Test V Vocabulary	Both Groups: Experimental, Control	Grades Four and Five only
Canadian Test of Basic Skills Test R Comprehension	Both Groups: Experimental, Control	Grades Four and Five only
Canadian Test of Basic Skills Form 3 Mathematics (Concepts)	Both Groups: Experimental, Control	Grades Four and Five only
Canadian Test of Basic Skills Form 3 Mathematics (Problems)	Both Groups: Experimental, Control	Grades Four and Five only
Gates-MacGinitie Reading Primary A, B, C, Forms 1, 2 Vocabulary	Both Groups: Experimental, Control	Grades Two and Three
Gates-MacGinitie Reading Primary A, B, C, Forms 1, 2 Comprehension	Both Groups: Experimental, Control	Grades Two and Three
Science Research Associates (SRA) Arithmetic	Both Groups: Experimental, Control	Grades Two and Three
School System Spelling	Both Groups: Experimental, Control	Grades Two, Three, Four and Five
Ukrainian Language Skills	Experimental only	Grades Two, Three, Four and Five

Questionnaires

The parent, teacher and principal questionnaires were piloted in three previous years. They were developed to gather precise information about the attitudes of parents, teachers and principals toward the program. Furthermore, they were designed to obtain information about the students' appreciation of Ukrainian culture, including the students' understanding of the Ukrainian Catholic Rite, and the following selected sub-problems: the appropriateness and achievement of program objectives, the effectiveness of program operation, the adequacy of curricular and instructional materials, the need for inservice training and special administrative arrangements.

DATA GATHERING AND STATISTICAL PROCEDURES

Administration of Achievement Tests

In June of 1979 the Gates-MacGinitie Reading tests and the Science Research Associates (SRA) arithmetic tests were administered to sixty-three children in the Grade Two Bilingual Program (T_4), and fifty-three children in the Grade Three program (T_3), and to equal numbers of pupils in two control groups (C_3, C_4), selected from the regular program. The Canadian Test of Basic Skills reading and mathematics tests were administered to thirty-four children in the Grade Four Bilingual Program (T_2) and forty-three children in the Grade Five Bilingual Program (T_1) and to an equal number of pupils in two control groups (C_1, C_2).

In addition, the School System Spelling tests were administered to all of the experimental and control group students at the Grade Two, Three, Four and Five levels. In order to assess achievement in Ukrainian, the Ukrainian Language Skills tests (Grades Two, Three, Four and Five) were administered to the experimental groups in the fall of 1978 as pre tests and again in June of 1979 as post tests.

Gathering of Questionnaire Data

In June of 1979, the parent, teacher and principal questionnaires were mailed out. Subsequently, a follow-up was carried out.

The questionnaire returns are shown in Table 9.

Statistical Procedures

The data for the study were gathered at both the school and school system levels. Tests were administered in the bilingual program schools to both bilingual, experimental students, and regular program, control students. Test results were also obtained from a central school system data bank. All data were tabulated and key punched on computer cards at Edmonton Catholic Schools Informational Systems. Statistical tests were carried out at the Computing Services, University of Alberta. The .05 level of significance was used in testing the differences between the means, and a two-tailed test of significance was used in the analysis.

In order to evaluate the achievement of bilingual program students, a *t* test for dependent samples was performed on the

standard scores of the experimental and control groups on the CTBS, Gates-MacGinitie, SRA and Spelling tests. A *t* test for dependent samples was also used to analyze the pre and post test scores in the Ukrainian Language Skills tests.

Table 9

Distribution of Questionnaires Sent to Parents, Teachers and Principals and the Percentage of Returns

Respondents	Number Sent	Number Returned	Percentage Returned
Parents of Grade One bilingual children	76	56	73.7
Parents of Grade Two bilingual children	63	45	71.4
Parents of Grade Three bilingual children	53	35	66.0
Parents of Grade Four bilingual children	34	22	64.7
Parents of Grade Five bilingual children	34	30	69.8
Teachers	12	10	83.3
Principals and Assistant principals	5	5	100.0

SUMMARY

In summary, the Ukrainian-English Bilingual Program was designed to provide students with the opportunity to learn the Ukrainian language as a "language of instruction", along with acquiring English language communication skills.

Questionnaires were developed to obtain information about the family backgrounds of the 269 students involved in the study.

Bilingual program students that were matched with a control group of students in the regular school program completed achievement instruments selected or developed for the study. Parents, teachers, principals and assistant principals completed questionnaires developed for the purpose of obtaining information about the perceptions of relevant groups toward the bilingual program. For the purpose of comparing the achievement test score results of the experimental and control groups, *t* tests for dependent samples were carried out.

III. ANALYSIS OF DATA AND FINDINGS

ACHIEVEMENT TEST RESULTS

The main problem of the study, as expressed in terms of pupil academic achievement, was examined directly by means of various group administered and individually administered achievement tests.

For the purpose of comparing the achievement test score results of the experimental and control groups, *t* tests for dependent samples were carried out.

Grade Five Test Score Results (Stream 1)

Analyses of the Grade Five test score results for the Canadian Test of Basic Skills (CTBS) tests, Vocabulary, Comprehension, and Mathematics (Concepts and Problems), and the School System Spelling test are indicated in Table 10.

As noted in Table 10, a significant difference was evident in the CTBS Mathematics (Problems) test score results at the Grade Five level. On the Mathematics (Problems) test, the bilingual program students scored significantly higher than regular program students. On the CTBS Vocabulary, Comprehension and Mathematics (Concepts) and the School System Spelling tests, however, no significant differences were evident between the experimental and control groups.

Table 10

Comparisons of Experimental (T_1) and Control (C_1) Students on Achievement Test Score Results Stream 1 (Grade Five)

Variable	N	Mean	S.D.	t value
Canadian Test of Basic Skills (Vocabulary)				
Bilingual Program (T_1)	42	28.9	6.2	0.99
Regular Program (C_1)	43	27.3	8.1	
Canadian Test of Basic Skills (Comprehension)				
Bilingual Program (T_1)	42	44.8	12.5	1.06
Regular Program (C_1)	43	42.0	12.2	
Canadian Test of Basic Skills Mathematics (Concepts)				
Bilingual Program (T_1)	42	22.1	4.0	1.07
Regular Program (C_1)	42	20.9	6.0	
Canadian Test of Basic Skills Mathematics (Problems)				
Bilingual Program (T_1)	42	16.5	4.3	2.46*
Regular Program (C_1)	42	13.9	5.4	
School System Spelling				
Bilingual Program (T_1)	42	68.5	15.4	0.94
Regular Program (C_1)	42	64.8	20.2	

*Significant at .05 level.

Grade Four Test Score Results (Stream 2)

Analyses of the Grade Four test score results for the Canadian Test of Basic Skills (CTBS) tests, Vocabulary, Comprehension and Mathematics (Concepts and Problems), and the School System Spelling test are indicated in Table 11.

As noted in Table 11, a significant difference was evident in the Canadian Test of Basic Skills (CTBS) Vocabulary test score results at the Grade Four level. On the Vocabulary test, the bilingual program students scored significantly lower than regular program students. On the CTBS Comprehension, Mathematics (Concepts and Problems) and the School System Spelling tests, however, no significant differences were evident between the experimental and control groups.

Table 11

Comparisons of Experimental (T_2) and Control (C_2) Students on Achievement Test Score Results Stream 2 (Grade Four)

Variable	N	Mean	S.D.	t value
Canadian Test of Basic Skills (Vocabulary)				
Bilingual Program (T_2)	33	21.0	7.7	-2.40*
Regular Program (C_2)	34	25.6	7.9	
Canadian Test of Basic Skills (Comprehension)				
Bilingual Program (T_2)	33	36.9	9.4	-1.49
Regular Program (C_2)	34	40.9	12.1	
Canadian Test of Basic Skills Mathematics (Concepts)				
Bilingual Program (T_2)	33	19.1	5.7	-0.24
Regular Program (C_2)	34	19.4	5.3	
Canadian Test of Basic Skills Mathematics (Problems)				
Bilingual Program (T_2)	33	14.2	5.2	-1.32
Regular Program (C_2)	34	16.0	5.5	
School System Spelling				
Bilingual Program (T_2)	34	67.3	16.6	-1.33
Regular Program (C_2)	34	72.5	15.9	

*Significant at .05 level.

Grade Three Test Score Results (Stream 3)

Analyses of the Grade Three test score results for the Gates-MacGinitie Vocabulary and Comprehension tests, the SRA Arithmetic test and School System Spelling test are presented in Table 12.

As indicated in Table 12, no significant differences were evident between the experimental and control groups on any of the test score results.

Table 12

Comparisons of Experimental (T_3) and Control (C_3) Students on Achievement Test Score Results Stream 3 (Grade Three)

Variable	N	Mean	S.D.	t value
Gates-MacGinitie (Vocabulary)				
Bilingual Program (T_3)	52	59.0	5.3	1.87
Regular Program (C_3)	53	56.5	8.3	
Gates-MacGinitie (Comprehension)				
Bilingual Program (T_3)	52	55.3	6.7	0.92
Regular Program (C_3)	53	54.1	7.1	
SRA Arithmetic				
Bilingual Program (T_3)	50	99.0	23.1	1.35
Regular Program (C_3)	53	92.8	23.0	
School System Spelling				
Bilingual Program (T_3)	52	87.2	11.9	0.30
Regular Program (C_3)	53	86.3	17.4	

Grade Two Test Score Results (Stream 4)

Grade Two test score results for the Gates-MacGinitie Vocabulary and Comprehension tests, the SRA Arithmetic test and the School System Spelling test are shown in Table 13.

Table 13 shows that a significant difference was evident in the Gates-MacGinitie Comprehension test score results at the Grade Two level. The bilingual program students scored significantly higher in reading comprehension than regular program students. On the Gates-MacGinitie Vocabulary test, however, no significant difference was evident between the experimental and control groups. On the SRA Arithmetic and School System Spelling tests, significant differences were evident between the experimental and control groups. On both tests, the bilingual program students scored significantly higher than regular program students.

Table 13

Comparisons of Experimental (T_4) and Control (C_4) Students on Achievement Test Score Results Stream 4 (Grade Two)

Variable	N	Mean	S.D.	t value
Gates-MacGinitie (Vocabulary)				
Bilingual Program (T_4)	63	59.3	6.2	1.69
Regular Program (C_4)	64	57.2	7.8	
Gates-MacGinitie (Comprehension)				
Bilingual Program (T_4)	63	59.0	7.1	2.07*
Regular Program (C_4)	64	56.2	7.8	
SRA Arithmetic				
Bilingual Program (T_4)	64	98.8	17.6	2.50*
Regular Program (C_4)	64	91.9	13.2	
School System Spelling				
Bilingual Program (T_4)	64	94.4	7.4	3.21**
Regular Program (C_4)	64	88.0	14.1	

*Significant at .05 level.
**Significant at .01 level.

Ukrainian Language Skills Test Score Results

Analyses of the Ukrainian Language Skills test score results were carried out to determine if significant mean differences were evident between pre and post tests. The test score results on the Ukrainian Language Skills test are presented in Table 14.

As noted in Table 14, a significant difference was evident in the Ukrainian Language Skills test score results at each of the Grade levels. On the comparison of the test score results on the pre and post test, a significant mean gain was evident, indicating that bilingual program students scored significantly higher on the post test at the Grades Two, Three, Four and Five levels.

Table 14

Comparison of Mean Scores on the Ukrainian Pre and Post Test by Stream

Variable	N	Mean	S.D.	t value
Stream 1, Grade 5				
Ukrainian Language Skills				
Pre test	41	85.1	16.0	- 9.83**
Post test		96.7	16.7	
Stream 2, Grade 4				
Ukrainian Language Skills				
Pre test	33	75.5	24.2	-10.85**
Post test		102.8	19.8	
Stream 3, Grade 3				
Ukrainian Language Skills				
Pre test	52	80.4	26.7	- 2.49*
Post test		122.5	120.1	
Stream 4, Grade 2				
Ukrainian Language Skills				
Pre test	53	68.3	30.4	-12.55**
Post test		114.7	14.2	

*Significant at .05 level.
**Significant at .01 level.

SUMMARY OF ACHIEVEMENT TEST FINDINGS

The main problem of the study, as expressed in terms of pupil achievement, was analyzed statistically in order to determine significant differences.

Reading Achievement. The results indicated that no significant mean differences were evident on the Vocabulary tests at the Grade Five, Grade Three and Grade Two levels as shown in Tables 10, 12 and 13. At the Grade Four level, however, the results indicated that the mean on the Vocabulary test for the regular program students was significantly higher than the mean for the bilingual students as shown in Table 11.

Moreover, no significant mean differences were evident on the Grade Five, Grade Four and Grade Three Comprehension tests as shown in Tables 10, 11 and 12. At the Grade Two level, however, the results indicated that the mean on the Comprehension test for the bilingual program students was significantly higher than the mean for the regular program students as shown in Table 13.

Mathematics Achievement. The results indicated that no significant mean differences were evident on the Mathematics Concepts test at the Grade Five and Grade Four levels as shown in Tables 10 and 11. At the Grade Five and Grade Two levels, however, the results indicated that the means on the Mathematics Problems test and the Arithmetic test, respectively, for the bilingual program students were significantly higher than the means for the regular program students as shown in Tables 10 and 13. No significant mean

differences, however, were evident on the Mathematics Problems test at the Grade Four level and the Arithmetic test at the Grade Three level as shown in Tables 11 and 12.

Spelling Achievement. The results indicated that no significant mean differences were evident on the Grade Five, Grade Four and Grade Three Spelling tests as shown in Tables 10, 11 and 12. At the Grade Two level, however, the results indicated that the mean on the Spelling test for the bilingual program students was significantly higher than the mean for the regular program students as shown in Table 13.

Ukrainian Achievement. The results indicated that significant differences between the Ukrainian Language Skills pre and post tests at the Grades Five, Four, Three and Two levels were evident, as shown in Table 14.

CULTURAL APPRECIATION

The main problem of the study, as expressed in terms of the second category, pupil cultural appreciation, was examined indirectly through the use of parent and teacher questionnaires. The section on the attitudes of relevant groups includes a discussion of parent and teacher perceptions of the effect of the bilingual program on pupil cultural appreciation.

ATTITUDES OF RELEVANT GROUPS

The main problem of the study, as expressed in terms of the third category, the perceptions of relevant groups toward the bilingual program, was examined by means of parent, teacher and principal questionnaires. Parents, teachers, principals and assistant principals were asked to evaluate the appropriateness of program objectives. Furthermore, parents were asked to rate the degree to which they felt their child was achieving the objectives of the program (Appendix A). Teachers, moreover, were asked to rate the degree to which they felt their classes were achieving the program objectives (Appendix B).

In addition, the attitudes of relevant groups toward the bilingual program were examined as they related to the following sub-problems: effectiveness of program operation, adequacy of curricular and instructional materials, inservice training and special administrative arrangements (Appendices A, B, C).

Appropriateness and Achievement of Program Objectives

Objective 1. The first objective of the Ukrainian-English Bilingual Program rated by parents was stated as follows:

> To provide children with the opportunity to communicate effectively in English and Ukrainian.

The parents rated the appropriateness and achievement of the objective on a five-point scale. As indicated in Table 15, columns 1 and 2 were collapsed into one category to show the

negative side of the continuum. Column 3 remained as one category to show the mid-point or neutral position on the continuum, while columns 4 and 5 were collapsed into one category to show the positive side of the continuum.

Table 15

Distribution of Parent Ratings of Objective 1, According to Appropriateness and Achievement (in Brackets)*

	N	Inappropriate 1 2 (Not achieved)	3	Appropriate 4 5 (Achieved)
G1 Parents**	55	1.8 (7.3)	9.1 (32.7)	89.1 (60.0)
G2 Parents	45	0 (4.4)	0 (24.4)	100.0 (71.1)
G3 Parents	34	0 (5.9)	2.9 (35.3)	97.1 (58.8)
G4 Parents	21	0 (0)	0 (9.5)	100.0 (90.4)
G5 Parents	29	0 (0)	10.3 (24.1)	89.7 (75.8)

*Expressed as a percentage of total respondents.
**G1, G2, G3, G4 and G5 refer to Grade level.

As noted in Table 15, the majority of parents rated the appropriateness of the objective very highly; between 89.1 and 100.0 percent of the parents gave a rating of 4 and 5 on appropriateness. The achievement of the objective, as rated by parents was also very high; between 58.8 and 90.4 percent of the parents gave a rating of 4 and 5.

Objective 2. The second objective of the Ukrainian-English Bilingual Program rated by parents was stated as follows:

> To develop an understanding and appreciation of the Ukrainian cultural heritage in the Canadian context.

The parents rated the appropriateness and achievement of the objective on a five-point scale, as presented in Table 16. (Columns 1 and 2 were collapsed on one side of the continuum, 4 and 5 on the opposite side.)

Table 16 shows that the majority of parents rated the appropriateness of the objective very highly; between 91.2 and 100.0 percent of the parents gave a rating of 4 and 5. The achievement of the objective, as rated by parents, as in the case of objective 1, was also very high; between 75.9 and 96.5 percent of the parents gave a rating of 4 and 5.

Table 16

Distribution of Parent Ratings of Objective 2, According to Appropriateness and Achievement (in Brackets)*

	N	Inappropriate 1 2 (Not achieved)	3	Appropriate 4 5 (Achieved)
G1 Parents**	54	1.9 (5.6)	0 (18.5)	98.1 (75.9)
G2 Parents	45	0 (2.2)	2.2 (13.3)	97.8 (84.4)
G3 Parents	34	2.9 0	5.9 (20.6)	91.2 (79.4)
G4 Parents	21	0 (0)	0 (4.8)	100.0 (95.2)
G5 Parents	29	0 (0)	6.9 (3.4)	93.1 (96.5)

*Expressed as a percentage of total respondents.
**G1, G2, G3, G4 and G5 refer to Grade level.

Objective 3. The third objective of the Ukrainian-English Bilingual Program rated by parents was stated as follows:

> To develop positive attitudes toward the learning of other languages and understanding of other cultures.

The parents rated the appropriateness and achievement of the objective on the basis of observed change on a five-point scale, as reported in Table 17. (Columns 1 and 2 were collapsed on one side of the continuum, 4 and 5 on the opposite side.)

As shown in Table 17, the majority of the parents rated the appropriateness of the objective very highly; between 86.2 and 100.0 percent of the parents gave a rating of 4 and 5.

Table 17

Distribution of Parent Ratings of Objective 3, According to Appropriateness and Achievement (in Brackets)*

	N	Inappropriate 1 2 (Not achieved)	3	Appropriate 4 5 (Achieved)
G1 Parents**	55 54	1.8 (9.3)	10.9 (29.6)	87.2 (61.1)
G2 Parents	45	2.2 (4.4)	2.2 (20.0)	95.6 (75.5)
G3 Parents	34	2.9 (2.9)	2.9 (29.4)	94.2 (67.6)
G4 Parents	21	0 (0)	0 (14.3)	100.0 (85.7)
G5 Parents	29	0 (0)	13.8 (20.7)	86.2 (79.3)

*Expressed as a percentage of total respondents.
**G1, G2, G3, G4 and G5 refer to Grade level.

Again, consistent with the ratings of objectives 1 and 2, the achievement of objective 3 was also rated very high; between 61.1 and 85.7 percent of the parents gave a rating of 4 and 5.

Objective 4. The fourth objective of the Ukrainian-English Bilingual Program rated by parents, teachers, principals and assistant principals was stated as follows:

> The pupils and their parents will have positive feelings about the participation of the pupils in the program.

The parents, teachers and principals rated the appropriateness and achievement of the objective on a five-point scale, as presented in Table 18. (Columns 1 and 2 were collapsed on one side of the continuum, 4 and 5 on the opposite side). The term "principal" as used in the tables and discussion that follow in this report, refers to both principals and assistant principals.

As noted in Table 18, parents, teachers and principals rated the appropriateness of the objective very highly; between 82.3 and 100.0 percent gave ratings of 4 and 5. In terms of pupil satisfaction, a clear majority of the parents (between 81.1 and 95.3 percent) indicated their children were "very happy" or "very satisfied" to participate in the bilingual program. Teachers also rated pupil satisfaction and parent satisfaction very highly; 90.0 and 100.0 percent respectively, gave ratings of 4 and 5. Principals likewise rated parent satisfaction and pupil satisfaction very high; 100.0 percent gave ratings of 4 and 5 in each case.

Table 18

Distribution of Parent, Teacher and Principal Ratings of Objective 4, According to Appropriateness and Satisfaction (in Brackets)*

	N	Inappropriate 1 2 (Very unhappy)	3	Appropriate 4 5 (Very happy)
G1 Parents**				
Rating of Appropriateness	55	1.8	7.3	91.0
and Satisfaction		(3.8)	(15.1)	(81.1)
G2 Parents				
Rating of Appropriateness	45	2.2	0	97.8
and Satisfaction		(0)	(6.7)	(93.3)
G3 Parents				
Rating of Appropriateness	34	0	17.6	82.3
and Satisfaction	(35)	(0)	(4.3)	(85.7)
G4 Parents				
Rating of Appropriateness	21	0	0	100.0
and Satisfaction		(0)	(4.8)	(95.3)
G5 Parents				
Rating of Appropriateness	29	0	10.3	89.7
and Satisfaction	(30)	(0)	(6.7)	(93.3)
Teacher Rating of Appropriatesness	10	0	0	100.0
Teacher Rating of Parent Satisfaction	(10)	(0)	(0)	(100.0)
Teacher Rating of Pupil Satisfaction	(10)	(0)	(10.0)	(90.0)
Principal Rating of Appropriateness	5	0	0	100.0
Principal Rating of Parent Satisfaction	(5)	(0)	(0)	(100.0)
Principal Rating of Pupil Satisfaction	(5)	(0)	(0)	(100.0)

*Expressed as percentage of total respondents.
**G1, G2, G3, G4 and G5 refer to Grade level.

Objective 5. The fifth objective of the Ukrainian-English Bilingual Program rated by parents, teachers and principals was stated as follows:

> Religion-Ukrainian Catholic Rite. To what extent do you feel that instruction in the Ukrainian Catholic Rite is appropriate and being achieved by means of the religion program?

The parents, teachers and principals rated the appropriateness and achievement of the objective on a five-point scale, as presented in Table 19. (Columns 1 and 2 were collapsed on one side of the continuum, 4 and 5 on the opposite side.)

As noted in Table 19, parents rated the appropriateness of the objective very highly; between 81.1 and 90.0 percent gave ratings of 4 and 5. The achievement of objective 5 was also rated very high; between 68.0 and 85.0 percent of the parents gave a rating of 4 and 5. Teachers also rated the appropriateness and achievement of objective 5 very highly; 100.0 and 80.0 percent, respectively, gave ratings of 4 and 5. Principals likewise rated the appropriateness of the objective very high; 100.0 percent gave ratings of 4 and 5.

Table 19

Distribution of Parent, Teacher and Principal Ratings of Objective 5, According to Appropriateness and Achievement (in Brackets)*

	N	Inappropriate 1 2 (Not achieved)	3	Appropriate 4 5 (Achieved)
G1 Parents**	53 (50)	3.8 (10.0)	15.1 (22.0)	81.1 (68.0)
G2 Parents	43	0 (4.7)	18.6 (18.6)	81.4 (76.8)
G3 Parents	32	3.1 (12.5)	15.6 (15.6)	81.3 (71.9)
G4 Parents	20	0 (5.0)	10.0 (10.0)	90.0 (85.0)
G5 Parents	26 (24)	3.8 (4.2)	15.4 (25.0)	80.8 (70.8)
Teachers	10	0 (10.0)	0 (10.0)	100.0 (80.0)
Principals	5	0	0	100.0

*Expressed as a percentage of total respondents.
**G1, G2, G3, G4 and G5 refer to Grade level.

Effectiveness of Program Operation

Questionnaire data provided information about the effectiveness of the program operation, according to the perceptions of parents, teachers and principals (Appendices A, B and C). On a wide variety of selected issues, the perceptions of parents, teachers and principals were analyzed. The results are presented below.

Instruction time: General Statement. A large majority of the parents (between 70.0 and 93.3 percent) were satisfied with the use of English and Ukrainian for an equal part of the school day. Some parents (between 2.2 and 13.3 percent) wanted more instruction in Ukrainian, while a small number (between 4.4 and 16.7 percent) wanted less instruction in Ukrainian. Teachers indicated that instruction in Ukrainian was given for 40 percent or more of the school day.

Instruction time: Religion Program. On the parent questionnaires, instruction time in the religion program was also stated very specifically:

> In the religion program, to what extent should instruction be offered in Ukrainian? (prayer, classroom celebrations, participation in liturgies, study of sacraments, Thanksgiving, Christmas, Lenten and Easter traditions)

Parents selected the amount of instruction time in Ukrainian preferred in the religion program while teachers indicated how much instruction was offered in Ukrainian over the year in the religion program, as indicated in Table 20.

Table 20 clearly indicates that a very large majority of parents prefer instruction in Ukrainian for 50% or more of the time, ranging from 81.5 to 93.4 percent, totals obtained from adding the three highest percentages of instruction time (50%, 75%, 100%) preferred by each category of parents. Furthermore, more than half of the parents of Grades Four and Five students (54.5 and 56.7 percent, respectively), prefer instruction in Ukrainian in the religion program for 75 percent or more of the time. Only a very small percentage of parents ranging from 6.7 to 18.6 percent prefer instruction in Ukrainian for 25 percent of the time or less.

Teachers, however, indicated that instruction in Ukrainian in the religion program was offered as follows: 40.0 percent of the teachers offered instruction in Ukrainian for 25 percent of the time; 30.0 percent offered instruction for 50 percent of the time; and 30.0 percent for 75 percent of the time (Table 20). As shown in Table 20, a fairly wide discrepancy exists between parental expectations for instruction in Ukrainian in the religion program and the amount of instruction time actually offered in Ukrainian.

Table 20

Distribution of Parent and Teacher Responses on Amount of Instruction Time in Ukrainian Preferred in the Religion Program and Offered (in Brackets)*

	N	None	25%	50%	75%	100%
Parents (Grade One)	54	1.9	16.7	46.3	13.0	22.2
Parents (Grade Two)	45	0	15.6	44.4	31.1	8.9
Parents (Grade Three)	35	2.9	8.6	42.9	25.7	20.0
Parents (Grade Four)	22	0	9.1	36.4	40.9	13.6
Parents (Grade Five)	30	0	6.7	36.7	40.0	16.7
Teachers	10	(0)	(40.0)	(30.0)	(30.0)	(0)

*Expressed as a percentage of total respondents.

Ukrainian materials. Teachers were equally divided on the matter of Ukrainian materials. Fifty percent of the teachers felt that there were enough or too many Ukrainian materials while 50.0 percent of the teachers felt that there were not sufficient Ukrainian language materials available to them. Of the Ukrainian materials that were available, many were considered very useful by 30.0 percent of the teachers.

Parental involvement. A large majority of parents (between 91.4 and 100.0 percent) felt satisfied with the way they were involved in the school program. Eighty percent of the teachers felt there was extensive involvement of parents in the activities of the bilingual program, while 70.0 percent felt that parental involvement was very desirable. Principals also unanimously felt (100.0 percent) that there was extensive involvement of parents and that such involvement was very desirable.

School facilities. A large proportion of teachers (70.0 percent) felt that school facilities were adequate, while 20.0 percent of the teachers felt that school facilities were more than adequate. Principals unanimously felt (100.0 percent) that school facilities were very adequate or excellent.

Continuation of the bilingual program. Over thirty-three percent of the teachers felt that the program should be continued without any modification. Sixty-six percent of the teachers felt that the program should be continued with minor modifications. Sixty

percent of the principals felt that the program should be continued as it is while 40.0 percent felt it should be continued with minor modifications. Of the latter, school principals suggested the following changes: more involvement of the school parent committee in organizing activities such as celebrations and fund raising, greater involvement of the parish clergy through regular classroom visits and assistance for students through the Resource Room program by bilingual instructors.

Continuation through Junior High. Regarding the continuation of the bilingual program, parents were asked to respond as follows:

> Please check all the cultural subject areas you feel would be appropriate to instruction in Ukrainian at the Junior High level.

The parents responded to the request, as indicated in Table 21. They identified cultural subject areas they perceived to be appropriate for instruction in Ukrainian at the Junior High level. Table 21 shows the subjects listed in rank order of highest to lowest preference by Grade level.

As indicated by Table 21, the subject areas listed in order of preference of total parents of Grades One, Two, Three, Four and Five students for instruction in Ukrainian in Junior High were as follows: religion, arts and crafts, music, language arts, home economics, drama, art, physical education, industrial arts, history, health, social studies and geography. Of importance, three of the subject areas, religion, arts and crafts, and music were considered appropriate for instruction in Ukrainian by a larger number of

parents than language arts, which ranked fourth in total number of responses. As noted in previous studies, it is suggested that parents may consider cultural objectives, which may be achieved through instruction in Ukrainian, just as important as linguistic objectives at the Junior High level.

Other subject areas rated appropriate for instruction in Ukrainian by more than 50 percent of the total respondents included home economics and drama. Overall, between Grade levels, parents were fairly consistent in rating the appropriateness of cultural subject areas for instruction in Ukrainian in Junior High, as shown in the rank orders.

Table 21

Ranking and Distribution of Total Parent Responses on Appropriateness of Cultural Subject Areas For Instruction in Ukrainian in Junior High

Subject Areas	Rank Order G1 Parents* N=56	G2 N=45	G3 N=35	G4 N=22	G5 N=30	Total Responses N=188
Religion	1	3	1	1	2	154
Arts and Crafts	1	1	2	3	2	154
Music	2	2	4	2	1	148
Language Arts	3	7	4	4	3	125
Home Economics	4	4	5	5	5	117
Drama	5	5	3	5	4	115
Art	6	6	7	6	7	92
Physical Education	8	7	6	7	6	83
Industrial Arts	9	7	10	7	9	64
History	7	9	8	7	8	63
Health	11	8	9	9	9	50
Social Studies	11	10	9	10	8	42
Geography	10	10	11	8	10	39

*G1, G2, G3, G4 and G5 refer to Grade level.

Parent Advisory Committee. Between 25.0 and 44.7 percent of the parents expressed an interest in participating as members of the Parent Advisory Committee. The majority of parents (between 55.3 and 75.0 percent), however, were not interested in participating. Fifty percent of the teachers were interested in acting as school representatives on the Parent Advisory Committee, while 50.0 percent were not interested.

The majority of parents (between 68.2 and 89.2 percent), however, felt that along with a School System Parent Advisory Committee, a Parent Ways and Means Committee should meet on a regular basis at each school offering the Ukrainian-English Bilingual Program. Between 10.8 and 31.8 percent of the parents felt it was not necessary for a Parent Ways and Means Committee to meet on a regular basis. Of interest, between 76.5 and 96.7 percent of the parents reported that they knew of at least one parent who was a member of the Parent Advisory Committee.

Teachers unanimously felt (100.0 percent) that a Parent Ways and Means Committee should meet on a regular basis ast each school. Of the principals, only 20.0 percent favored the idea while 80.0 percent were opposed.

Integration of program within the school. Teachers and principals indicated the degree to which bilingual students felt they were an integral part of the school rather than isolated from other students. On a five-point scale, 50.0 percent of the teachers gave

ratings of 4 and 5 to indicate students were very well integrated rather than very isolated. Thirty percent of the teachers were neutral on the matter, while 20.0 percent gave a rating of 2 to indicate bilingual students were isolated from other students in the school. In contrast, all principals (100.0 percent) gave ratings of 4 and 5 to indicate that students were very well integrated.

Success of the bilingual program. Teachers and principals rated the success of the bilingual program. On a five-point scale, 70.0 percent of the teachers gave ratings of 4 and 5 to indicate that the bilingual program was very successful rather than very unsuccessful. Principals unanimously gave ratings of 4 and 5 to indicate that the bilingual program was very successful.

Adequacy of Curricular and Instructional Materials

Questionnaire data provided information about the adequacy of curricular materials, according to the perceptions of teachers.

A need for curricular materials in the following subject areas was identified: language arts (including reading), social studies, religion, music, art, physical education and health. A need for instructional materials in language arts, social studies, religion, art, physical education and health, was also evident, according to the perceptions of teachers. Moreover, teachers suggested that the following types of instructional materials were required: guide books, games, storybooks, pictures, tapes and audio-visual aids.

Of interest, most teachers (75.0 percent) indicated that they taught their students the written Ukrainian script (cursive) rather than the printed Ukrainian script (12.5 percent).

Inservice Training

Questionnaire data provided information about the need for, and kind of inservice training required, according to the perceptions of teachers. Of the former, 90.0 percent of the teachers indicated a need for more inservices. Of the latter, teachers ranked the inservices in the following order, proceeding from highest to lowest priority: reading, bilingual teaching strategies (methods), music, physical education, games, health, religion (Ukrainian Catholic Rite), and use of audio-visual materials.

Special Administrative Arrangements

Questionnaire data provided information about the need for special administrative arrangements, according to the perceptions of principals. Additional instructional materials (library books, reference, reading and audio-visual materials) were required. Principals also identified the following areas that required special timetabling or scheduling arrangements: French (Grades 4-7), instrumental music (Grades 4-6), Physical Education (K-7), teacher preparation time and split grade scheduling. Principals reported, too, that it was possible to provide resource room assistance to the extent of "one to six students per bilingual class per year" for students experiencing difficulties in reading.

Moreover, principals reported that in making staffing arrangements fluently bilingual teachers were required. A Ukrainian Bilingual Resource Room teacher and a choral director were also required to enhance the program, according to the perceptions of individual principals. As for budgeting, all principals indicated that a supplementary budget was required at the school level for instructional materials (reading, social studies and library materials) used specifically in the bilingual program. One principal suggested a per student grant allocation to cover the cost of special materials.

All principals reported that transportation arrangements and student enrolment were generally adequate. Major problems identified by individual principals included the following: parental concerns about large class sizes and split grades, inadequate recruitment of students, and difficulties in dividing the Kindergarten students into two classes, a morning and an afternoon class.

SUMMARY OF PERCEPTIONS OF RELEVANT GROUPS

In general, all relevant groups, parents, teachers and principals, rated the appropriateness of the objectives of the bilingual program very highly. Moreover, the achievement of objectives was generally rated almost equally as high, indicating that the objectives of the bilingual program were being met to a large extent, according to the perceptions of parents, teachers and principals.

Parents, teachers and principals generally considered the program operation to be very effective. A majority of the parents expressed satisfaction with the amount of instruction time offered in Ukrainian and were highly satisfied with the way they were involved in the school program.

Regarding the continuation of the bilingual program through Junior High, parents considered the following subject areas, in order of highest to lowest priority, to be most appropriate for instruction in Ukrainian in Junior High: religion, arts and crafts, music, language arts, home economics, and drama.

Most parents were not interested in participating on a Parent Advisory Committee, however, a majority of the parents felt that along with a School System Parent Advisory Committee, a Parent Ways and Means Committee should meet on a regular basis at each school offering the Ukrainian-English Bilingual Program.

Fifty percent of the teachers felt that sufficient Ukrainian language materials were not available. Both teachers and principals indicated that there was extensive involvement of parents in the bilingual program and that such involvement was very desirable. A majority of teachers felt that the bilingual program should be continued with minor modifications. Consistent with parent perceptions, a majority of teachers reported that a Parent Ways and Means Committee should meet on a regular basis at each school, while most principals felt that such meetings were not required. Although most teachers were neutral on the matter of school facilities, considering them to be neither excellent nor very inadequate, both

teachers and principals indicated that students were very well integrated in the school program and that the bilingual program was very successful.

Most teachers identified a need for both curricular and instructional materials, and perceived a need for inservice training.

Generally, principals reported that special administrative arrangements were not required at the school level. They indicated, however, that special budgeting arrangements were required at the school level. Transportation arrangements were considered adequate while student enrolment, for the most part, was also considered adequate.

IV. SUMMARY, CONCLUSIONS AND IMPLICATIONS

In this chapter the evaluation of the Ukrainian-English Bilingual Program in the Edmonton Catholic School System, carried out during the 1978-1979 school term, is summarized and the conclusions are presented, followed by a discussion of the implications.

SUMMARY OF THE STUDY

The main problem of this study was stated as follows: What are the consequences associated with the implementation and operation of a bilingual program?

An attempt was made to determine the consequences of the bilingual program by addresssing the following sub-problems:

1. Pupil Academic Achievement
   (a) How does the performance of the Ukrainian Bilingual Program students in the English language arts and in mathematics compare with other students in the Edmonton Catholic Schools?
   (b) What progress have students made in learning Ukrainian language skills over the course of one school year?

2. Cultural Appreciation
   (a) What is the effect of the program on the students' appreciation of the Ukrainian culture, including their understanding of the Ukrainian Catholic Rite?

3. Attitudes of Relevant Groups

   (a) To what extent are program objectives perceived to be appropriate by parents, teachers and principals?

   (b) To what extent are program objectives being achieved, according to the perceptions of parents, teachers and principals?

   (c) To what extent is the program operation effective, according to the perceptions of parents, teachers and principals?

   (d) To what extent are curricular and instructional materials considered to be adequate for the program, according to the perceptions of teachers?

   (e) What kind of inservice training is required, according to the perceptions of teachers?

   (f) What are the special administrative arrangements required at the school level for the effective operation of the bilingual program?

In order to evaluate pupil academic achievement in the Ukrainian-Bilingual Program, various group administered and individually administered achievement tests were given to experimental and control students. Pupils registered in the Ukrainian-English Bilingual Program in the Edmonton Catholic School System during the 1978-1979 school term at the Grades Two, Three, Four and Five levels, made up the experimental groups. A total of 193 students, 43 Grade Five students, 34 Grade Four students, 53 Grade Three students, and

63 Grade Two students participated in the study. The experimental students were matched with control students on the basis of the following criteria: Grade, sex, age, Primary Mental Ability (PMA) score and socio-economic status (SES) rating. Control students were selected from the regular programs of the three schools which offered the Ukrainian-English Bilingual Program or from the regular programs of nearby schools of relatively similar socio-economic area.

For the purpose of comparing the achievement test score results of the experimental and control groups, t tests for dependent samples were carried out on the results of the following tests: 1) Canadian Test of Basic Skills (CTBS), Reading and Mathematics; 2) Gates-MacGinitie Reading Survey, Vocabulary and Comprehension; 3) Science Research Associates (SRA) Arithmetic; and 4) School System Spelling test. A correlated t test was carried out to examine the mean differences between the pre and post test results on the Ukrainian Language Skills test.

In order to examine pupil cultural appreciation, parent and teachers questionnaires were developed to obtain information about the attitudes of students in the bilingual program.

In order to determine the perceptions of relevant groups toward the bilingual program, parent, teacher and principal questionnaires were developed to examine selected sub-problems. Parents, teachers and principals were asked to evaluate the appropriateness of program objectives. In addition, parents and teachers were asked to rate the degree to which objectives were being achieved. Moreover, the attitudes of relevant groups toward the bilingual program were

also examined by obtaining information about the following sub-problems: effectiveness of program operation, adequacy of curricular and instructional materials, inservice training and special administrative arrangements.

CONCLUSIONS

Pupil Academic Achievement

On the basis of testing the differences between the means, the following conclusions were drawn about pupil academic achievement:

1. No significant mean differences were evident on the Vocabulary tests at the Grades Two, Three and Five levels. At the Grade Four level, however, the results indicated that the mean on the Vocabulary test for the regular program students was significantly higher than the mean for the bilingual students.

No significant mean differences were evident on the Grades Three, Four and Five Comprehension tests. At the Grade Two level, however, the results indicated that the mean on the Comprehension test for the bilingual program students was significantly higher than the mean for the regular program students. Of considerable interest, in the previous year's study, the means on the Grades One, Two and Four Comprehension tests for the bilingual students were significantly higher than the means for the regular program students.

Overall, the results were generally consistent with previous evaluation studies that examined reading achievement at the Grades One, Two, Three and Four levels.

2. No significant mean differences were evident on the Mathematics Concepts tests at the Grades Four and Five levels and the Arithmetic test at the Grade Three level. At the Grades Two and Five levels, however, the means on the Arithmetic test and the Mathematics Problems test, respectively, for the bilingual program students were significantly higher than the means for the regular program students. No significant mean differences, however, were evident on the Arithmetic test at the Grade Three level and the Mathematics Problems test at the Grade Four level.

For the most part, the arithmetic results were consistent with previous findings, although the mean for the Grade Two regular program students was significantly higher than the mean for the bilingual students, in the previous year's study.

3. No significant mean differences were evident on the Grades Three, Four and Five Spelling tests. At the Grade Two level, however, the mean on the Spelling test for the bilingual program students was significantly higher than the mean for the regular program students. In the previous year, the means on the Grade Two and Four Spelling tests for the bilingual students were significantly higher than the means for the regular program students.

4. Significant differences between the Ukrainian Language Skills pre and post test results were evident at the Grades Two, Three, Four and Five levels. Thus it was concluded that students made significant progress in acquiring Ukrainian language skills during the school year.

Attitudes of Relevant Groups

Parents, teachers and principals rated the appropriateness and achievement of the objectives of the bilingual program very highly, indicating that the objectives of the bilingual program were being met to a large extent.

Furthermore, parents, teachers and principals generally expressed a high degree of satisfaction with the program operation, in responding to a wide variety of selected issues. A need for additional curricular and instructional materials was identified by teachers. Moreover, according to the perceptions of the teachers, additional inservice training was required. Principals indicated that special timetabling or scheduling arrangements were required, contrary to the previous year's study, and a need for special budgeting arrangements, at the school level, was identified.

IMPLICATIONS

Several implications were suggested:

1. The results of this study were generally consistent with recent studies. The implementation and operation of the bilingual program at the elementary level led to positive consequences in pupil

academic achievement. The bilingual students achieved as well or better, in some instances, than students in the regular program.

The results suggest, therefore, that participation in a bilingual program does not hinder student academic progress in the first language of instruction. Moreover, the results indicate that students can make significant progress in learning a second language as a language of instruction at the elementary level.

2. To date, studies of Ukrainian-English bilingual programs have indicated that students generally have positive attitudes toward learning Ukrainian. The results of this study are consistent with previous findings. The implementation and operation of the bilingual program at the elementary level led to the development of positive attitudes toward the Ukrainian language and culture, according to the perceptions of parents and teachers.

Overall, the results of this study suggest that participation in a bilingual program may have a positive effect on pupil cultural appreciation, and that students may develop a positive attitude toward their cultural heritage, while learning a second language as a language of instruction at the elementary level.

3. The results of the study, based on the perceptions of relevant groups suggest several major implications of an administrative nature. Firstly, parents expressed very high expectations for instruction in religion in the Ukrainian Catholic Rite. Furthermore,

a large majority of the parents (over 81.0 percent) preferred instruction in Ukrainian in the religion program for fifty percent or more of the time. Yet only sixty percent of the teachers reported that instruction in Ukrainian was carried out in the religion program for fifty percent or more of the time. Strategies will thus have to be developed and implemented to increase the amount of instruction in Ukrainian in the religion program in order to close the gap between parental expectations and the current level of instruction.

Secondly, teachers identified a need for more curricular and instructional materials and inservice training. The development of curricular and instructional materials, therefore, and the planning of appropriate inservice training will need to be maintained, in order that the bilingual program may continue to improve.

Thirdly, a major implication to be drawn from the examination of school administrative practices is that special budgeting arrangements are required at the school level for the effective operation of the bilingual program. Of much importance, the same finding was reported in the previous year's evaluation report.

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